

# LARP Open mid-plane dipole

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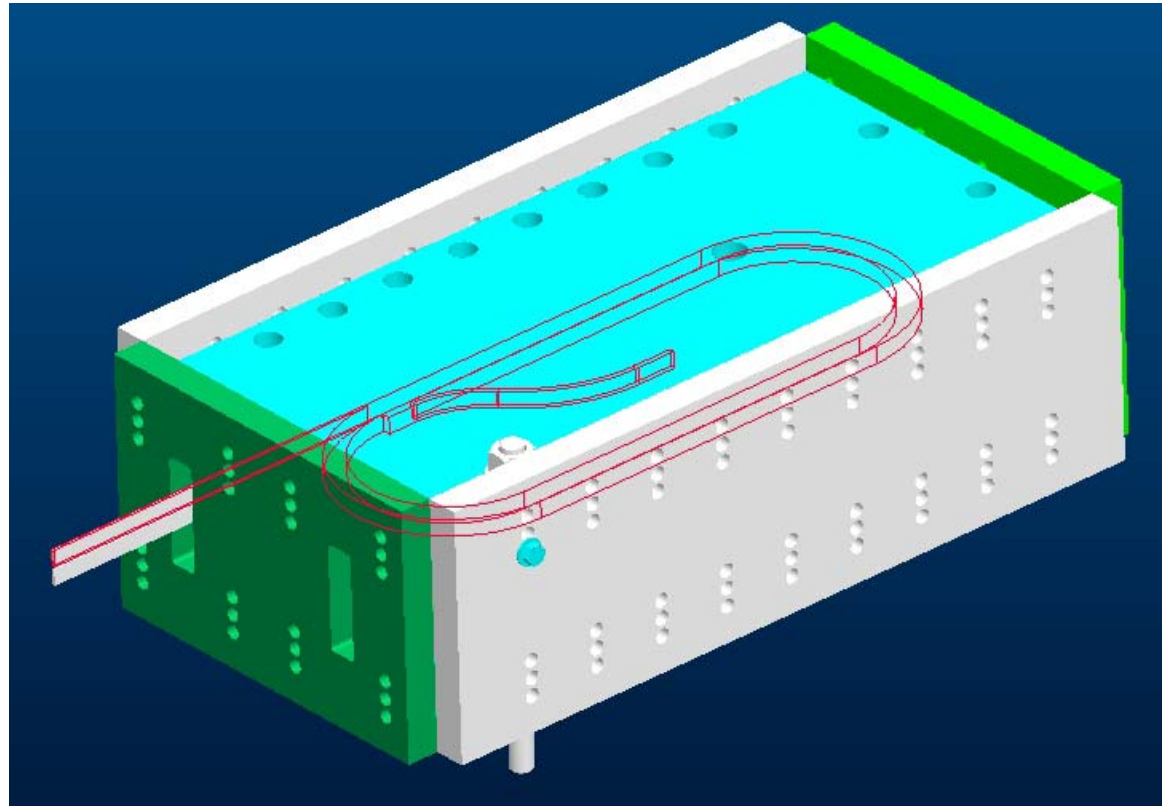
12/14/04

# LARP open mid-plane dipole

- Assemble and test LBNL subscale coils
  - Closed mid-plane.
  - Open mid-plane with coils pre-loaded.
  - Open mid-plane with no coil pre-load.
    - Remove load from one axis only
      - Axial
      - Vertical
      - Horizontal
    - Attempt to mimic deflections calculated for dipole design.

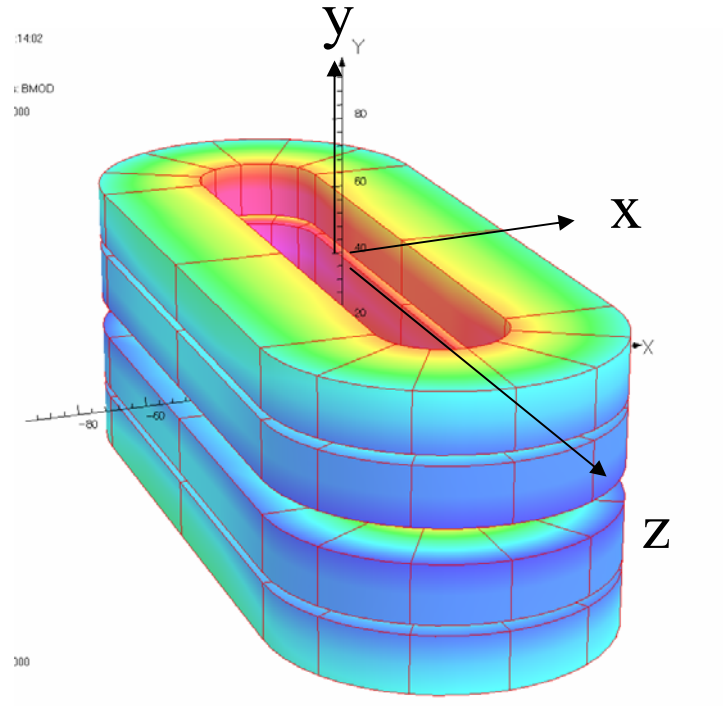
# LARP open mid-plane dipole - Assemble for testing

- Utilize parts from "common coil" test fixture
  - Heavy top plates
  - A286 SST tie rods
  - Spacer plates



## LARP open mid-plane dipole - Forces

- Total force by direction
  - $F_x = 0.43 \text{ MN}$  (97 klbs)
  - $F_y = 0.23 \text{ MN}$  (52 klbs)
  - $F_z = 0.14 \text{ MN}$  (32 klbs)
- High force in transverse direction, common coil high forces in vertical direction



# LARP open mid-plane dipole - Assemble for testing

- Additional parts required:
  - One additional set of spacer plates
  - Side and end plates
  - Filler pieces around the coils
  - Mid-plane support for open mid-plane tests

